Coastal Dunes: A Vanishing Legacy

Point Reyes National Seashore is home to many endangered plants and animals, but few people realize that we have *ecosystems* that are also endangered. One of these disappearing ecosystems, coastal sand dunes, is represented here at Abbotts Lagoon. The large sand dunes near the lagoon are one of the last remaining places to see the plants and animals that once thrived in the shifting sand dunes of the California coast. Many of the dunes that once occurred along the coast are now buried under cities and housing developments. The dunes that remain are threatened by European beachgrass (*Ammophila arenaria*) and iceplant (*Carpobrotus edulis*), non-native plants that aggressively displace native dune plants and stabilize the normally moving dunes. Unless stopped, European beachgrass and iceplant form dense lawns over the dunes, destroying scenic views of shifting sands and leading to the death of animals and plants that are found nowhere else in the world.

Park biologist using GPS (global positioning system) technology to map dune vegetation.

The threatened Western Snowy Plover (*Charadrius alexandrinus nivosus*) prefers open sandy areas with low-growing vegetation for nesting. European beachgrass has invaded most of these open areas, restricting plover nests to the very front of the beach, where the birds are more vulnerable to disturbance from beach visitors and predators.

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The Myrtle's silverspot butterfly (*Speyeria zerene myrtleae*), an endangered species, flies over the dunes to feed on the nectar of native plants, such as the rare curly-leaved monardella (*Monardella undulata*). Other rare insects, such as the globose dune beetle (*Coelus globosus*), sandy beach tiger beetle (*Cicindela hirticollis gravida*), bumblebee scarab beetle (*Lichnanthe ursina*), and the Point Reyes blue butterfly (*Icaricia icarioides parapheres*), all listed as federal species of concern, need coastal dune habitat with diverse native vegetation to thrive.

The dunes around Abbotts Lagoon are home to many rare plants and animals. Tidestrom's lupine (*Lupinus tidestromii*) above and beach layia (*Layia carnosa*) right, are two endangered plants that live only in open dunes on the California coast. These and other native plants decline as European beachgrass and iceplant invade open areas.

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The Abbotts Lagoon Dune Restoration Project

To protect the rare plants and animals that live in the sand dunes at Abbotts Lagoon, National Park Service staff are working to restore the dunes to a more natural state. This restoration effort involves removal of the non-native plants European beachgrass and iceplant, which completely displace native plants. Due to the sensitive nature of the habitat, removal is being conducted by small work crews and volunteer groups using hand tools. Removal of these non-native plants will preserve views of shifting sand dunes and provide habitat for rare plants and animals.

Point Reyes National Seashore is not alone in its efforts to save dunes along the Pacific coast. Federal and local agencies, as well as non-profit community organizations, are working hard to protect dune systems from Oregon down to the beaches of Southern California. For more information on dune restoration, stop by the Bear Valley Visitor Center.

Volunteers remove invasive iceplant (left) from dune habitat, where it outcompetes and kills native plants. European beachgrass forming a dense stand on sand dunes (right). In addition to out competing native species, European beachgrass captures sand grains at its base, building unnaturally high dunes at the front of the beach. These high dunes prevent animals such as the Western Snowy Plover from moving between front and rear areas of the dunes.